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For: TRANSVERSE ELECTRODISPLACIVE ACTUATOR ARRAY

1           1.       A transverse electrodisplacive actuator array for controlling the optical  
2       phasing of a reflective surface comprising:  
3                   a support structure;  
4                   a plurality of ferroic electrodisplacive actuator elements extending  
5       from a proximate end at said support structure to a distal end; each actuator element  
6       including at least one addressable electrode and one common electrode spaced from said  
7       addressable electrode and extending along the direction of said proximate and distal ends  
8       along the transverse  $d_{31}$  strain axis;  
9                   a reflective member having a reflective surface and a mounting surface  
10      mounted on said actuator elements; and  
11                  a plurality of addressable contacts and at least one common contact for  
12      applying voltage to said addressable and common electrodes to induce a transverse strain  
13      in addressed actuator elements to effect an optical phase change in the reflective surface  
14      at the addressed actuator elements.

1           2.       The transverse electrodisplacive actuator array of claim 1 in which said  
2       support structure and said actuator elements are integral.

1           3.       The transverse electrodisplacive actuator array of claim 1 in which said  
2       actuator elements are electrostrictive.

1           4.     The transverse electrodisplacive actuator array of claim 1 in which said  
2     actuator elements are magnetostrictive.

1           5.     The transverse electrodisplacive actuator array of claim 1 in which said  
2     actuator elements are piezoelectric.

1           6.     The transverse electrodisplacive actuator array of claim 1 in which said  
2     actuator elements are lead magnesium niobate.

1           7.     The transverse electrodisplacive actuator array of claim 1 in which said  
2     addressable contacts are on a surface of said support structure.

1           8.     The transverse electrodisplacive actuator array of claim 7 in which said  
2     addressable electrodes extend through said support structures to said addressable  
3     contacts.

1           9.     The transverse electrodisplacive actuator array of claim 1 in which said  
2     common contact is on a surface of said support structure.

1           10.    The transverse electrodisplacive actuator array of claim 9 in which said  
2     common electrodes extend through said support structure to said common contact on said  
3     support structure.

1           11.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           common contact is on the said reflective member.

1           12.    The transverse electrodisplacive actuator array of claim 11 in which said  
2           common electrodes extend through said actuator elements to said common contact on  
3           said reflective member.

1           13.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           actuator elements are a ferroelectric material.

1           14.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           actuator elements are a ferromagnetic material.

1           15.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           actuator elements are a lead zirconate titanate.

1           16.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           actuator elements are a ferroic ceramic.

1           17.    The transverse electrodisplacive actuator array of claim 1 in which said  
2           actuator elements are single crystal materials.

1           18.    The transverse electrodisplacive actuator array of claim 1 in which said

2        reflective surface is a continuous surface.